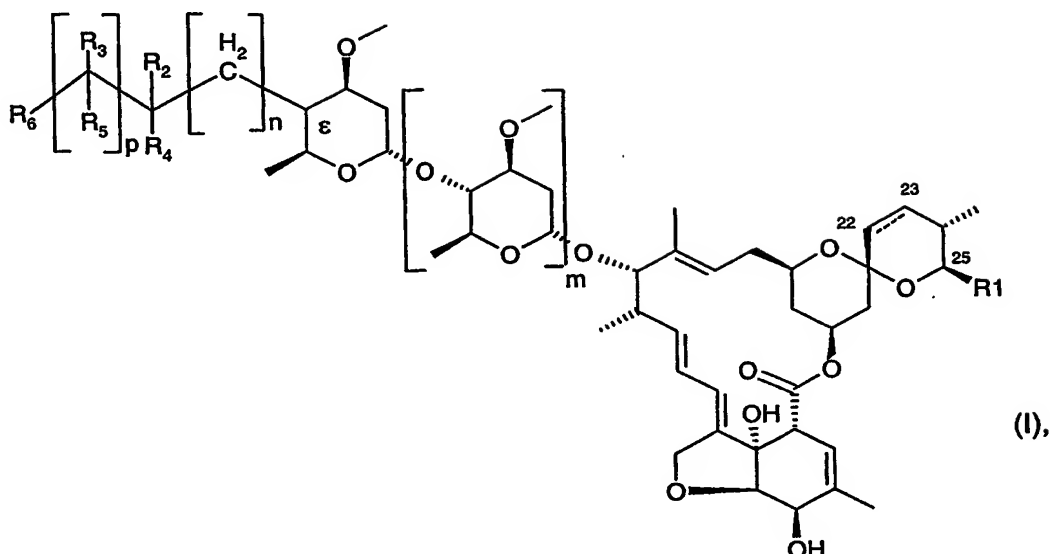


WHAT IS CLAIMED IS:

1. A compound of the formula



wherein the bond of atoms C₂₂ and C₂₃ is a single or double bond;

m is 0 or 1;

n is 0, 1 or 2;

p is 0 or 1;

R₁ is C₁-C₁₂-alkyl, C₃-C₈-cycloalkyl or C₂-C₁₂-alkenyl;

R₂ is H, C₁-C₁₂-alkyl, C₁-C₁₂-haloalkyl, C₁-C₁₂-hydroxyalkyl, OH, halogen, -N₃, SCN, NO₂, CN, C₃-C₈-cycloalkyl unsubstituted or substituted by from one to three methyl groups, C₃-C₈-halocycloalkyl, C₁-C₁₂-alkoxy, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkoxy-C₁-C₆-alkoxy, C₁-C₆-alkoxy-C₁-C₆-alkoxy-C₁-C₆-alkyl, C₂-C₁₂-alkenyl, C₂-C₁₂-haloalkenyl, C₂-C₁₂-haloalkenyloxy, C₂-C₁₂-alkynyl, C₂-C₁₂-haloalkynyl, C₃-C₁₂-alkynyloxy, C₃-C₁₂-haloalkynyloxy, -P(=O)(OC₁-C₆-alkyl)₂, -Si(C₁-C₆-alkyl)₃, -(CH₂)-Si(C₁-C₆-alkyl)₃, -Si(OC₁-C₆-alkyl)₃, -N(R₉)₂, -(CH₂)-N(R₉)₂, wherein the two substituents R₉ are independent of each other, -C(=X)-R₇, -(CH₂)-C(=X)-R₇, -O-C(=X)-R₇, -(CH₂)-O-C(=X)-R₇, -S-C(=X)-R₇, -(CH₂)-S-C(=X)-R₇, -NR₉-C(=X)-R₇, -(CH₂)-NR₉-C(=X)-R₇, -NR₉-NHC(=X)-R₇, -NR₉-OR₁₀, -(CH₂)-NR₉-OR₁₀, -SR₉, -S(=O)R₁₁, -S(=O)₂R₁₁, aryl, heterocyclyl, aryloxy or heterocyclyloxy; wherein the aryl, heterocyclyl, aryloxy and heterocyclyloxy radicals are unsubstituted or, depending upon the possibilities of substitution at the ring, mono- to penta-substituted by substituents selected from the group

consisting of OH, halogen, CN, NO₂, SCN, -N₃, C₁-C₁₂alkyl, C₃-C₈cycloalkyl, C₁-C₁₂haloalkyl, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₁-C₁₂haloalkylthio, C₁-C₆alkoxy-C₁-C₆alkyl, C₂-C₈alkenyl, C₂-C₈alkynyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂haloalkynyl, C₃-C₁₂alkynyloxy, C₃-C₁₂haloalkynyloxy and phenoxy;

or, when p is 1, R₂ together with R₃ is a bond;

or R₂ together with R₄ is =O or =S;

or R₂ together with R₄ form with the carbon to which they are bound a three- to seven-membered ring, which may be monocyclic or bicyclic, and may be saturated or unsaturated, and that may contain one or two hetero atoms selected from the group consisting of N, O and S, and which is either unsubstituted or independently of one another mono- to penta-substituted with substituents selected from OH, =O, SH, =S, halogen, CN, -N₃, SCN, NO₂, aryl, C₁-C₁₂alkyl, C₃-C₈cycloalkyl, C₁-C₁₂haloalkyl, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₁-C₁₂haloalkylthio, C₁-C₆alkoxy-C₁-C₆alkyl, C₂-C₈alkenyl, C₂-C₈alkynyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂haloalkynyl, C₃-C₁₂alkynyloxy, C₃-C₁₂haloalkynyloxy, phenoxy, phenyl-C₁-C₆alkyl, -N(R₉)₂ wherein the two R₉ are independent of each other, C₁-C₆alkylsulfinyl, C₃-C₈cycloalkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₃-C₈halocycloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₃-C₈cycloalkylsulfonyl, C₁-C₆haloalkylsulfonyl and C₃-C₈halocycloalkylsulfonyl; or

R₂ together with R₄ is =NN(R₁₂)₂, wherein the two substituents R₉ are independent of each other;

or, when p is 0, R₂ together with R₄ and R₆ is =N;

or when p is 0, R₂ together with R₆ is =NOR₁₂ or =NN(R₁₂)₂, wherein the two substituents R₉ are independent of each other;

R₃ is H, C₁-C₁₂-alkyl, halogen, halo-C₁-C₂alkyl, CN, -N₃, SCN, NO₂, C₃-C₈cycloalkyl, unsubstituted or substituted by from one to three methyl groups, C₃-C₈halocycloalkyl, C₁-C₁₂alkoxy, C₁-C₆alkoxy-C₁-C₆alkyl, C₁-C₆alkoxy-C₁-C₆alkoxy-C₁-C₆alkyl, C₃-C₈cycloalkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₃-C₈cycloalkylthio, C₁-C₁₂haloalkylthio, C₁-C₁₂alkylsulfinyl, C₃-C₈cycloalkylsulfinyl, C₁-C₁₂haloalkylsulfinyl, C₃-C₈halocycloalkylsulfinyl, C₁-C₁₂alkylsulfonyl, C₃-C₈cycloalkylsulfonyl, C₁-C₁₂haloalkylsulfonyl, C₃-C₈halocycloalkylsulfonyl, C₂-C₈alkenyl, C₂-C₈alkynyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂haloalkynyl, C₃-C₁₂haloalkynyloxy, -N(R₉)₂, wherein the two substituents R₉ are independent of each other, aryl, heterocyclyl, aryloxy or heterocyclyloxy; wherein the aryl, heterocyclyl, aryloxy and hetero-

cyclyloxy radicals are unsubstituted or, depending upon the possibilities of substitution at the ring, mono- to penta-substituted by substituents selected from the group consisting of halogen, CN, NO₂, C₁-C₁₂alkyl, C₃-C₈cycloalkyl, C₁-C₁₂haloalkyl, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₁-C₁₂haloalkylthio, C₁-C₆alkoxy-C₁-C₆alkyl, C₂-C₈alkenyl, C₂-C₈alkynyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂haloalkynyl and C₃-C₁₂haloalkynyloxy;

or when p is 1, R₃ together with R₂ is a bond;

R₄ is H, C₁-C₁₂-alkyl, C₁-C₁₂-haloalkyl, C₁-C₁₂-hydroxyalkyl, OH, halogen, NO₂, CN, C₃-C₈cycloalkyl unsubstituted or substituted by from one to three methyl groups, C₃-C₈halocycloalkyl, C₁-C₁₂alkoxy, C₁-C₆alkoxy-C₁-C₆alkyl, C₁-C₆alkoxy-C₁-C₆alkoxy, C₁-C₆alkoxy-C₁-C₆alkoxy-C₁-C₆alkyl, C₂-C₁₂alkenyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂alkynyl, C₂-C₁₂haloalkynyl, C₃-C₁₂haloalkynyloxy, -P(=O)(OC₁-C₆alkyl)₂, -Si(C₁-C₆alkyl)₃, -(CH₂)-Si(C₁-C₆alkyl)₃, -Si(OC₁-C₆alkyl)₃, -N(R₉)₂, -(CH₂)-N(R₉)₂, wherein the two substituents R₉ are independent of each other, -C(=X)-R₇, -(CH₂)-C(=X)-R₇, -O-C(=X)-R₇, -(CH₂)-O-C(=X)-R₇, -S-C(=X)-R₇, -(CH₂)-S-C(=X)-R₇, -NR₉C(=X)R₇, -(CH₂)-NR₉C(=X)R₇, -NR₉NHC(=X)-R₇, -NR₉-OR₁₀, -(CH₂)-NR₉-OR₁₀, -SR₉, -S(=O)R₁₁, -S(=O)₂R₁₁, aryl, heterocyclyl, aryloxy or heterocyclyloxy; wherein the aryl, heterocyclyl, aryloxy and heterocyclyloxy radicals are unsubstituted or, depending upon the possibilities of substitution at the ring, mono- to penta-substituted by substituents selected from the group consisting of OH, halogen, CN, NO₂, C₁-C₁₂alkyl, C₃-C₈cycloalkyl, C₁-C₁₂haloalkyl, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₁-C₁₂haloalkylthio, C₁-C₆alkoxy-C₁-C₆alkyl, C₂-C₈alkenyl, C₂-C₈alkynyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂haloalkynyl, C₃-C₁₂haloalkynyloxy and phenoxy;

or R₄ together with R₂ forms =O or =S;

or when p is 1, R₄ together with R₅ is a bond;

or, when p is 0, together with R₂ and R₆ is ≡N;

R₅ and R₆ independently of each other are H, C₁-C₁₂-alkyl, -N₃, CN, NO₂, OH, SH, halogen, halo-C₁-C₂alkyl, hydroxy-C₁-C₂alkyl, C₃-C₈cycloalkyl that is unsubstituted or substituted by from one to two methyl groups, C₃-C₈halocycloalkyl, C₁-C₁₂alkoxy, C₁-C₆alkoxy-C₁-C₆alkyl, C₁-C₆alkoxy-C₁-C₆alkoxy, C₁-C₆alkoxy-C₁-C₆alkoxy-C₁-C₆alkyl, C₃-C₈cycloalkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂haloalkylthio, C₂-C₈alkenyl, C₂-C₈alkynyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂haloalkynyl, C₃-C₁₂haloalkynyloxy, -P(=O)(OC₁-C₆alkyl)₂,

-CH₂-P(=O)(OC₁-C₆alkyl)₂, -Si(OC₁-C₆alkyl)₃, -N(R₉)₂, -O-N(R₉)₂, wherein the two substituents R₉ are independent of each other, -C(=X)-R₇, -CH=NOH, -CH=NOC₁-C₆alkyl, -O-C(=X)-R₇, -S-C(=X)-R₇, -NR₉C(=X)R₇, -NR₉NHC(=X)-R₇, -NR₉-OR₁₀, -SR₉, -S(=O)R₁₁, -S(=O)₂R₁₁, -CH₂-S(=O)₂R₁₁, aryl, aryloxy, benzyloxy, -NR₉-aryl, heterocyclyl, heterocyclioxy, -NR₉-heterocyclyl, -CH₂-aryl, -CH₂-O-aryl, -CH₂-NR₉-aryl, -CH₂-NR₉-C₁-C₂alkyl, -CH₂-heterocyclyl, -CH₂-O-heterocyclyl and -CH₂-NR₉-heterocyclyl; wherein the aryl, aryloxy, benzyloxy, -NR₉-aryl, heterocyclyl, heterocyclioxy and -NR₉-heterocyclyl radicals are unsubstituted or, depending upon the possibilities of substitution at the ring, mono- to penta-substituted by substituents selected from the group consisting of OH, =O, SH, =S, halogen, CN, NO₂, C₁-C₁₂alkyl, C₃-C₈cycloalkyl, C₁-C₁₂haloalkyl, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₁-C₁₂haloalkylthio, C₁-C₆alkoxy-C₁-C₆alkyl, C₂-C₈alkenyl, C₂-C₈alkynyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂haloalkynyl, C₃-C₁₂haloalkynyloxy, phenoxy, methylenedioxy, NH₂, NH(C₁-C₁₂alkyl), N(C₁-C₁₂alkyl)₂ and C₁-C₆alkylsulfinyl; or

R₅ and R₆ are, together with the carbon atom to which they are bound, a five- to seven-membered ring, which may be saturated or unsaturated, and which may contain one or two members selected from the group consisting of O, NR₈ and S; and which is optionally substituted with one to three substituents selected from C₁-C₁₂-alkyl, CN, NO₂, OH, halogen, halo-C₁-C₂alkyl, C₃-C₈cycloalkyl, C₃-C₈halocycloalkyl, C₁-C₁₂alkoxy, C₁-C₆alkoxy-C₁-C₆alkyl, C₁-C₆alkoxy-C₁-C₆alkoxy-C₁-C₆alkyl, C₃-C₈cycloalkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₃-C₈cycloalkylthio, C₁-C₁₂haloalkylthio, C₂-C₁₂alkenyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂alkynyl, C₂-C₁₂haloalkynyl and C₃-C₁₂haloalkynyloxy;

or when p is 1, R₅ together with R₄ is a bond;

or, when p is 0, R₆ together with R₂ and R₄ is ≡N;

R₇ is H, OH, C₁-C₁₂alkyl, C₁-C₁₂haloalkyl, C₂-C₁₂alkenyl, C₂-C₁₂alkynyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂haloalkynyl, C₃-C₁₂haloalkynyloxy, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₆alkoxy-C₁-C₆alkyl, C₁-C₆alkoxy-C₁-C₆alkoxy, C₂-C₈alkenyloxy, C₃-C₈alkynyloxy, -N(R₈)₂ wherein the two R₈ are independent of each other, aryl, aryloxy, benzyloxy, heterocyclyl, heterocyclioxy or heterocyclylmethoxy; and wherein the aryl, aryloxy, benzyloxy, heterocyclyl and heterocyclioxy radicals are unsubstituted or, depending upon the possibilities of substitution at the ring, mono- to penta-substituted by substituents selected from the group consisting of halogen, CN, NO₂, C₁-C₁₂alkyl, C₃-C₈cycloalkyl, C₁-C₁₂haloalkyl, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₁-C₁₂haloalkylthio, C₁-C₆alkoxy-C₁-C₆alkyl, C₂-C₈alkenyl,

C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₈alkynyl, C₂-C₁₂haloalkynyl and C₃-C₁₂haloalkynyloxy;

R₈ is H, C₁-C₆alkyl that is optionally substituted with one to five substituents selected from the group consisting of halogen, C₁-C₆alkoxy, C₁-C₆alkoxy-C₁-C₆alkoxy, C₂-C₁₂alkenyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂alkynyl, C₂-C₁₂haloalkynyl, C₃-C₁₂haloalkynyl-oxy, hydroxy and cyano, C₃-C₈-cycloalkyl, aryl, benzyl or heteroaryl; wherein the aryl, benzyl and heteroaryl radicals are unsubstituted or, depending on the possibilities of substitution on the ring, mono- to trisubstituted by substituents selected from the group consisting of OH, halogen, CN, NO₂, C₁-C₁₂alkyl, C₁-C₁₂haloalkyl, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₂-C₁₂alkenyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂alkynyl, C₂-C₁₂haloalkynyl, C₃-C₁₂haloalkynyloxy and C₁-C₁₂haloalkylthio;

R₉ is H, C₁-C₆alkyl, C₁-C₆cycloalkyl, C₁-C₆alkoxy-C₁-C₆alkyl, C₁-C₆alkoxy-C₁-C₆alkoxy-C₁-C₆alkyl, C₂-C₁₂alkenyl, C₂-C₁₂alkynyl, benzyl, aryl or heteroaryl;

R₁₀ H, C₁-C₆alkyl that is optionally substituted with one to five substituents selected from the group consisting of halogen, C₁-C₆alkoxy, NO₂, hydroxy and cyano, C₁-C₁₂haloalkyl, C₂-C₁₂alkenyl, C₂-C₁₂haloalkynyl, C₂-C₁₂haloalkenyl, C₂-C₁₂alkynyl, C₃-C₈-cycloalkyl, aryl, benzyl or heteroaryl; wherein the aryl, benzyl and heteroaryl radicals are unsubstituted or, depending on the possibilities of substitution on the ring, mono- to trisubstituted by substituents selected from the group consisting of OH, halogen, CN, NO₂, C₁-C₁₂alkyl, C₁-C₁₂haloalkyl, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₁-C₁₂haloalkylthio, C₂-C₁₂alkenyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂alkynyl, C₃-C₁₂haloalkynyl and C₃-C₁₂haloalkynyloxy;

R₁₁ is H, C₁-C₆alkyl that is optionally substituted with one to five substituents selected from the group consisting of halogen, C₁-C₆alkoxy, hydroxy and cyano, -N(R₉)₂ wherein the two substituents R₉ are independent of each other, C₃-C₈cycloalkyl, C₃-C₈halocycloalkyl, C₂-C₁₂alkenyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂alkynyl, C₃-C₁₂haloalkynyl, C₃-C₁₂haloalkynyloxy, aryl, benzyl or heteroaryl; wherein the aryl, benzyl and heteroaryl radicals are unsubstituted or, depending on the possibilities of substitution on the ring, mono- to trisubstituted by substituents selected from the group consisting of OH, halogen, CN, NO₂, C₁-C₁₂alkyl, C₁-C₁₂haloalkyl, C₁-C₁₂alkoxy, C₁-C₁₂haloalkoxy, C₁-C₁₂alkylthio, C₁-C₁₂haloalkylthio, C₂-C₁₂alkenyl, C₂-C₁₂haloalkenyl, C₂-C₁₂haloalkenyloxy, C₂-C₁₂alkynyl, C₂-C₁₂haloalkynyl and C₃-C₁₂haloalkynyloxy;

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R_{12} is H, C_1 - C_6 alkyl, C_1 - C_6 cycloalkyl, C_1 - C_6 alkoxy- C_1 - C_6 alkyl, C_1 - C_6 alkoxy- C_1 - C_6 alkoxy- C_1 - C_6 alkyl, C_2 - C_{12} alkenyl, C_2 - C_{12} alkynyl, $-C(=O)C_1$ - C_6 alkyl, $-C(=O)OC_1$ - C_6 alkyl, $-SO_2C_1$ - C_6 alkyl, benzyl, aryl, heteroaryl;

X is O or S;

or, if appropriate, an E/Z isomer, E/Z isomer mixture and/or tautomer thereof, in each case in free form or in salt form;

with the proviso, that the group $R_6-[C(R_3)(R_5)]_p-C(R_2)(R_4)-[CH_2]_n-$, which is attached to the ϵ -position of the compound of the formula (I), is not $NC-CH_2-$ or $HOOC-CH_2-$ when m is 1 and the bond between atoms 22 and 23 is a single bond.

2. A pesticide which contains at least one compound of the formula (I) as described in claim 1 as active compound and at least one auxiliary.

3. A method for controlling pests wherein a composition as described in claim 2 is applied to the pests or their habitat.

4. A process for preparing a composition as described in claim 2 which contains at least one auxiliary, wherein the active compound is mixed intimately and/or ground with the auxiliary(s).

5. The use of a compound of the formula (I) as described in claim 1 for preparing a composition as described in claim 2.

6. The use of a composition as described in claim 2 for controlling pests.

7. A method according to claim 3 for protecting plant propagation material, wherein the propagation material or the location where the propagation material is planted is treated.

8. Plant propagation material treated in accordance with the method described in claim 7.